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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,647	10/29/2001	Eric R. Lovegren	R11.12-0763	1207

7590            06/19/2003

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[REDACTED] EXAMINER

SUN, XIUQIN

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2863

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/046,647	LOVEGREN ET AL.
	Examiner	Art Unit
	Xiuqin Sun	2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-21 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4, 8, 11-14, 18 and 21 is/are rejected.
- 7) Claim(s) 5-7, 9, 10, 15-17, 19 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 June 2002 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vestergaard et al. (U.S. Pat. No. 4196385) in view of Scott et al. (U.S. Pat. No. 5748002).

Vestergaard et al. teach an apparatus and method for measuring the concentration of a material in a process fluid (col. 1, lines 5-10 and col. 2, lines 12-16), comprising the steps and means that implement: an antenna configured to contact the process fluid (col. 2, lines 17-30, lines 65-67; col. 3, lines 1-2 and col. 4, lines 36-40); a pulse generator coupled to configure the antenna to generate an electric pulse transmit pulse through the antenna (col. 2, lines 17-30, lines 65-67 and col. 3, lines 1-2); a pulse receiver coupled to the antenna configured to receive a reflected pulse from the antenna (col. 3, lines 29-38); and a concentration calculator configured to calculate the concentration of the material as a function of the reflected pulse (col. 2, lines 17-30; and col. 4, lines 60-67).

Vestergaard et al. do not mention explicitly that: the electric pulse generated by the pulse generator is a microwave pulse; said concentration of the material is calculated as a function of a time delay of the return pulse;

Scott et al. teach a technique for monitoring composition of substances, wherein microwave energy is used as the said electric pulse (col. 1, lines 16-32; col. 3, lines 37-43; col. 5, lines 15-26; col. 7, lines 16-48; col. 8, lines 32-47; col. 13, lines 51-57; col. 25, lines 66-67; col. 26, lines 1-9; col. 28, lines 66-67; col. 29, lines 1-22 and col. 42, lines 42-64). Scott et al. further teach: said concentration of the material is calculated as a function of a time delay of the return pulse (col. 17, lines 1-21); and said calculation includes calculating a dielectric constant of the process fluid (col. 1, lines 55-67 and col. 2, lines 1-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Scott et al. in the system of Vestergaard et al. in order to use a simple and powerful technique for probing the concentration of a material in a process fluid (Scott et al., col. 1, lines 16-32).

3. Claims 3, 4, 8, 13, 14, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vestergaard et al. in view of Scott et al., as applied to claims 1 and 11 above, and further in view of Marrelli (U.S. Pat. No. 5763794).

Vestergaard et al. and Scott et al. teach the apparatus and method that includes the subject matter discussed above, but do not mention explicitly that: said concentration of the material is calculated as a function of an energy level of the return

pulse; said antenna comprises a pitot tube; and the calculated concentration is transmitted on a process control loop.

Marrelli teaches a method of determining concentration of material in a process fluid, wherein said concentration of the material is calculated as a function of an energy level of the return pulse (col. 1, lines 12-21; col. 3, lines 53-67 and col. 4, lines 1-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Marrelli in the system of Vestergaard and Scott in order to carry out the calculation based on attenuation of transmitted and reflected microwave energy (Marrelli, col. 1, lines 12-21).

Marrelli further teaches: a pitot tube is used in sampling the fluid for determining the concentration of the material in the process fluid; and the calculated concentration is transmitted on a process control loop (col. 3, lines 1-28; col. 3, lines 53-67 and col. 4, lines 1-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Marrelli in the system of Vestergaard and Scott in order to provide a better means for sampling the fluid to be analyzed for process control purpose (Marrelli, col. 1, lines 49-58).

#### ***Allowable Subject Matter***

4. Claims 5-7, 9,10,15-17, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons for Allowance***

5. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 5 and 15 is the inclusion of the limitation that said antenna extends in a direction of a flow of the process fluid. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes the claims allowable over the prior art.

The primary reason for the allowance of claims 6, 7, 16 and 17 is the inclusion of the limitation that said antenna is curved. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes the claims allowable over the prior art.

The primary reason for the allowance of claims 9,10,19 and 20 is the inclusion of the limitation that said pulses are carried along an exterior and/or interior of the pitot tube. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes the claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (703)305-3467. The examiner can normally be reached on 7:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Xiuqin Sun  
Examiner  
Art Unit 2863

XS  
XS  
June 11, 2003

*John Barlow*  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800